

Investigation of the Physico-Chemical Processes of Sulphidation
by the Dilatometric Method

SOV/129-58-10-7/14

results the following conclusions are arrived at:
sintering at 200 to 300°C of a charge consisting of
powder iron and sulphur brings about the formation of
iron sulphides; this is confirmed by the changes in the
dilatometric curves of the specimens and chemical
analysis of powder mixtures heated to these temperatures;
for obtaining sulphide films (anti-seizure coatings),
sulphidation of hardened components can be effected at
180 to 200°C by combining the process of sulphidation
with tempering of the components after hardening.
There are 4 figures, 2 tables and 5 references,
4 of which are Soviet, 1 English.

ASSOCIATION: NATI

1. Iron alloys—Sintering
2. Sintering—Chemical effects
3. Sintering—Temperature factors
4. Sulfur—Thermal effects

Card 2/2

GILMAN, T.P.

3(2):25(1)
 Abadomlya nauk SSSR. Institut mashinovedeniya
 Poryadomnye stoykosty detalей машин /sul'fidirovaniye/; sbornik
 stoykosty (Increasing the Wear Resistance of Machine Parts, Sulfurization); Collection of Articles) Moscow, Mashgiz, 1959.
 126 p. Errata slip inserted. 4,500 copies printed.
 M. (Title page); N. M. Krushchov, Doctor of Technical Sciences;
 M. (Inside book); A. G. Mitin, Engineer; Tech. Ed.: V. D.
 El'kina; Managing Ed. for Literature on General Technical and
 Transport Machine Building (Mashiz): L. N. Kuznetsov, Engineer.
 PURPOSE: This collection of articles is intended for engineering
 and technical workers of machine-building and overhauling plants.
 COVERAGE: This book presents results of investigations of methods
 to increase the resistance of machine parts to wear. A new
 method of sulfurization which improves the friction behavior of
 cast iron and steel is described. An analysis of the effect of sulfuri-
 zation on the anti-friction properties and wear of metal are given.
 These articles are the Transactions of a seminar held at the
 Institute of Mechanical Engineering of the Academy of Sciences,
 USSR, in December 1956.

TABLE OF CONTENTS:

Dobrovolsky, M. S., Doctor of Chemical Sciences, Ye. A. Alek-
 seyeva, and M. V. Khablon, Engineers. Selecting Salt Baths
 for Sulfurization of Iron Alloys
 The authors recommend the use of a salt bath as the most
 controllable and uniform method of sulfurization. They
 develop the compositions of these baths and the optimum
 temperatures of operation. 62

Zimovich, M. J., Engineer. Investigation of the Sulfurization
 Process
 The author discusses sulfurization in the liquid bath, baths
 operating at medium and low temperatures, control of the
 process, x-ray and metallographic investigations, hardness,
 work-in, and wear resistance tests. 79

Melnyov, V. D., Engineer. X-ray Analysis of the Surface Layer
 of Sulfurized Specimens
 The author investigated various bath compositions by x-ray
 analysis in order to evaluate the character of sulfurization
 in respect to simultaneous formation of nitrides. 95

Gilman, T. P., Engineer. Sulfurization of Iron Carbide With Cu99
 in Mineral Oil and ammonia
 The author describes a process in which a sulfur suspension
 in mineral oil and ammonia are introduced together into
 the furnace. This process is a combined sulfurizing and
 cyaniding process having several advantages in comparison
 with other sulfurization methods according to the author. 105

Gilman, T. P., Engineer. Sulfurization of Bushings Made of
 Iron Powder by Introducing Sulphur into the Charge
 The author describes the results of experiments using a
 method, claimed by the author, to be new. The work was
 carried out at Stalingrad Tractor Plant in collaboration
 with the Institute of Automobile and Tractor Scientific Research
 Institute. The author stresses the advantages of this
 process which gives a uniform distribution of sulfides in
 the metal. 110

S/191/60/000/010/015/017
B004/B060

AUTHORS: Perlin, S. M., Gil'man, T. P., Leytes, A. Z.
TITLE: Study of the Completeness of Hardening of Unsaturated Polyester Resins by the Dilatometric Method

PERIODICAL: Plasticheskiye massy, 1960, No. 10, pp. 64-68

TEXT: The authors studied the hardening degree of ПН-1 (PN-1) resin by the use of different initiators and catalysts. The previously performed tests for Rockwell heat, bending strength, and water absorption showed that no clear knowledge can be obtained concerning the hardening on the basis of physicomechanical tests. An investigation was therefore conducted with a Schevenaar differential dilatometer of the firm Amsler. Dilatation curves displayed breaks with insufficient hardening of the resin. The following optimum values were obtained for the addition of initiator and catalyst: 3% cumene hydroperoxide (initiator) and 6-8% cobalt naphthenate (catalyst). At 1.5% benzoyl peroxide and 0.6% dimethyl aniline a complete hardening was attained only after repeated heating. Dilatometric curves of the following glass reinforced plastics were also taken: 1) 30%
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Study of the Completeness of Hardening of Unsaturated Polyester Resins by the Dilatometric Method S/191/60/000/010/015/017 B004/B060 ✓

phenol formaldehyde resin with 70% epoxy resin and glass reglet; 2) polyester resin with glass reglet; 3) polyester resin with glass fabric; 4) polyester resin with glass mat. The hysteresis of heating and cooling curves showed that in all specimens hardening was incomplete. There are 8 figures, 4 tables, and 6 references: 2 Soviet, 2 US, and 2 German.

Card 2/2

GILMAN, T.P.; PERLIN, S.M.; LEYTES, A.Z.

Electro consistometer for determining the processing time, gelatinisation, and hardening of resins. Plast.massy no.11:68-71 '60.

(Resins, Synthetic)

(MIRA 13:12)

36279

S/069/62/024/002/004/008
B101/B110

15.8350

AUTHORS: Zubov, P. I., Lepilkina, L. A., Gil'man, T. P.

TITLE: Effect of lubricant and finishing materials on the internal stresses and adhesion properties of polyester coatings

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 2, 1962, 174-177

TEXT: ПН-1 (PN-1) polyester resin films, ~2200 μ thick, were applied to glass parallelepipeds and polymerized at 75°C in the presence of 3% cumene hydroperoxide and 8% cobalt naphthenate dissolved in styrene. One of the glass surfaces was modified with a preparation, and the internal stress was measured optically with a self-recording instrument. Adhesion was determined from the maximum (critical) stress at which the film detached from the glass. The following modifiers were used: (1) Paraffin emulsion consisting of stearin, vaseline, and transformer oil with CO-20 (SO-20) dicyana diamine formaldehyde resin as emulgator: the film detached already after 30 min. (2) AC-1 (AS-1) disapol, a polymerization product from butyl methacrylate and methacrylamide in the presence of dibutyl sebacinate: here, and on unmodified surfaces, at lower internal stress, however, separation set in after 12 hrs. (3) МФ-17 (MF-17) urea formaldehyde resins
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Effect of lubricant and ...

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showed better results: film adhesion to glass exceeded 12 hrs. (4) The best results were obtained with ПБЭ-3 (PVE-3) polyvinyl acetate emulsion with and without chromolan additions (a cation-active preparation). Internal stress increased after 30-60 min but was moderated by 0.7% chromolan. Then, gradual relaxation followed. The film did not detach from the glass. Tests for the effect of film thickness on its separation from the glass yielded similar results from the different preparations: from glass modified with paraffin emulsion, a film thinner than that from unmodified glass detached, whereas with MF-17 thicker films showed good adhesion. Data are given for glass reinforced plastics with a 50% content of glass fiber: the bending strength (a) and internal stress (b) obtained with paraffin emulsion were 2200 kg/cm² and 10.8 kg/cm², respectively; with MF-17 a = 2880, b = 28.6; with AS-1 a = 2596, b = 3.8, and with PVE-3 containing 0.7% chromolan, a = 3300, b = 2.8. There are 4 figures, 1 table, and 2 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR, Otdel polimerov
(Institute of Physical Chemistry of AS USSR, Department of
Polymers), Vsesoyuznyy nauchno-issledovatel'skiy proyektnyy
institut ugol'nogo mashinostroyeniya, Moskva (All-Union
Scientific Research, Design and Planning Institute of Coal,
Moscow)

Card 2/3

Effect of lubricant and ...

S/069/62/024/002/004/008
B101/B110

SUBMITTED: April 20, 1961

Card 3/3

X

S/653/61/000/000/034/051
I007/I207

AUTHORS: Perlin, S.M., Gil'man, T.P., and Leytes, A.Z.

TITLE: Determination of hardening degree of unsaturated polyester resins by the dilatometric method

SOURCE: Plastmassy v mashinostroyenii i priborostroyenii. Pervaya resp. nauch.-tekhn. konfer. po vopr. prim. plastmass v mashinostr. i priborostr., Kiev, 1959. Kiev, Gostekhnizdat, 1961, 367-375

TEXT: The paper presents results of dilatometric determinations of series of physicomachanical properties of polyester resins by means of the differential dilatometer of the Chevenard system which yields much better results than conventional dilatometers. As was found, hardness, water-absorption and bending strength depend on the hardening degree of the resin. The dilatometric method permits suit-

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I007/I207

Determination of hardening degree...

able evaluation of the hardening degree of the above resins; it makes it also possible to distinguish between the temporary incomplete hardening and the constant incomplete hardening. The above method may also be successfully used for the determination of the hardening degree of glass-reinforced plastics, of their dimensional stability and heat resistance. There are 7 figures. ✓

Card 2/2

KLINOV, I.Ya.; KUTSENOK, B.I.; FABRIKANT, T.L.; GIL'MAN, TS.I.

Chemically stable mastics based on a modified asbestos vinyl.
Plast.massy no.2:44-50 '61. (MIRA 14:2)
(Plastics) (Protective coatings)

21571

188300 4016, 1138, 1208

S/020/61/137/003/025/030
B101/B208

AUTHORS: Kolotyrkin, Ya. M., and Gil'man, V. A.

TITLE: Effect of chlorine ions on the electrochemical and corrosion behavior of zirconium

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 3, 1961, 642-645

TEXT: It was found in papers by E. A. Gee, L. B. Golden, W. E. Lusby (Ref. 1, see below), D. F. Taylor (Ref. 2, see below), and L. B. Golden, I. R. Lane, W. L. Acherman (Ref. 3, see below) that zirconium may be corroded by chlorine ions under certain conditions. As these papers do not permit exact conclusions on the causes of this behavior of zirconium, a more thorough investigation has now been made of the conditions, under which Zr is corroded by chlorine ions. The dependence of the dissolution rate of Zr on the potential was determined by a potentiostatic method described by the authors in Ref. 7 (ZhFKh, 30, 1990, (1956)) and Ref. 8 (DAN, 114, 1265 (1957)). The experiments were performed in 1.0; 0.1; 0.01 N HCl; 1.0 N H₂SO₄; 1.0 N KBr; 1.0 N KI. Pure zirconium (99.8%)

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Effect of chlorine ions on the ...

was used as electrode. The liquid reagents were purified by distillation. The solutions were saturated with N_2 which was bubbled through also during the measurement. Fig. 1 shows the result of the potentiostatic measurements. In H_2SO_4 , Zr was passive in the entire potential range studied. In the presence of halogen compounds, however, Zr is dissolved when a critical potential φ_{cr} is attained, φ_{cr} remaining constant irrespective of current density. The following results were obtained in galvanostatic measurements: Temporary positive and negative shifts of the potential are accomplished by increasing and reducing the current density, respectively. The potential always returns to the value φ_{cr} . Measurement of the charge curves also indicated that at first Zr is polarized to more positive values than φ_{cr} . At a constant concentration of Cl^- , the deviation of the potential from φ_{cr} increases with the current density. At constant current density, the deviation increases with decreasing Cl^- concentration. Addition of Fe^{3+} exerted the same effect as application of anodic polarization. φ_{cr} was attained at a certain

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Effect of chlorine ions on the ...

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concentration of the iron salt. Further increase of the concentration of Fe^{3+} had no influence. It was found visually that, when φ_{or} is attained, an irregular corrosion occurs, which gives rise to the formation of pittings, which increases with the current density. With decreasing current density, the pittings are again partly passivated. This reversibility of the process is explained by the fact that at a certain density of the polarization current, the affinity of Zr to the halogen ion is greater than to the passivating oxygen. The passivating oxygen is displaced by the halogen ion. The irregular corrosion may be explained by the permanent nonuniform distribution of the plate current on the metal surface. The assumption that the corrosion process is retarded in time by the formation of primary complexes of the $\text{ZrCl}_n^{(4-n)+}$ type could not be experimentally confirmed. It may therefore be assumed that these complexes decompose by hydrolysis, the chlorine ions are again liberated, and thus act as catalysts of corrosion. Mention is made of N. A. Balashova and B. N. Kabanov (Ref. 15: DAN, 121, 126 (1958)) and L. V. Vanyukova (Ref. 14: DAN 59, 917 (1948)).

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Effect of chlorine ions on the , , ,

There are 3 figures and 15 references: 8 Soviet-bloc and 7 non-Soviet-bloc. The 4 references to English-language publications read as follows:
E. A. Gee, L. B. Golden, W. E. Lusby, Ind. and Eng. Chem. 41, 1668 (1949);
D. F. Taylor, Ind. and Eng. Chem. 42, 639 (1950); L. B. Golden, I. R.
Lane, W. L. Acherman, Ind. and Eng. Chem. 44, 1930 (1952); 45, 782 (1953),
I. R. Lane, L. B. Golden, W. L. Acherman, Ind. and Eng. Chem. 45, 1067,
(1953).

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova
(Physicochemical Institute imeni L. Ya. Karpov)

PRESENTED: October 20, 1960, by A. N. Frumkin, Academician

SUBMITTED: October 13, 1960

Card 4/5

35527

S/020/62/143/003/026/029
B101/B144

18. 8300

AUTHORS: Gil'man, V. A., and Kolotyrkin, Ya. M.

TITLE: Mechanism of pitting corrosion of zirconium in halide solutions .

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 3, 1962, 640 - 642

TEXT: In the previous work (DAN, 137, no. 3, 642 (1960)) it was presumed theoretically that pitting corrosion of Zr in chloride solutions was a consequence of local depassivation of the metal surface by chlorine ions. This depassivation occurs when the Cl^- concentration reaches a critical value, thus necessitating an induction period. This assumption was checked experimentally by measuring the time t_m (sec), which elapses after imposition of anodic polarization until the minimum φ_m occurs in the curve φ versus t . Results at various current densities and electrolyte concentrations are (t_m , sec):

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B101/B144

Mechanism of pitting corrosion...

i, a/cm ²	KBr			KCl		
	0.01 N	0.1 N	1.0 N	0.01 N	0.1 N	1.0 N
5·10 ⁻⁶	1200	1080	-	1410	1290	-
5·10 ⁻⁵	92.5	78.5	73.5	91	83.2	79.5
5·10 ⁻⁴	9.6	8.3	7.7	10.0	8.0	6.7

KCl + Na ₂ SO ₄		KCl + Na ₂ CO ₃	
a	b	c	d
2545	-	-	-
165	327	174	250
15.8	32.9	16.5	26

Legend: (a) 0.05 N [Cl⁻] + 0.05 N [SO₄²⁻]
(b) 0.025 N [Cl⁻] + 0.075 N [SO₄²⁻]
(c) 0.05 N [Cl⁻] + 0.05 N [CO₃²⁻]
(d) 0.025 N [Cl⁻] + 0.075 N [CO₃²⁻]

With increasing halide concentration and decreasing current density the reproducibility of the data decreases. The mean deviation was in the case of 5·10⁻⁴ a/cm² and 0.01 N: 5 - 6%; of 5·10⁻⁵ - 5·10⁻⁶ a/cm² and 1.0 N: 18 - 23%. The zirconium specimens were treated with dilute HF. It is
Card 2/3

ACCESSION NR: AP4034543

S/0020/64/155/005/1155/1158

AUTHORS: Gil'man, V. A.; Koloty*rkin, Ya. M.

TITLE: The mechanism of dissolving zirconium in acid fluoride solutions

SOURCE: AN-SSSR. Doklady*, v. 155, no. 5, 1964, 1155-1158

TOPIC TAGS: zirconium, solution mechanism, dissolution kinetics, hydrogen evolution kinetics, zirconium oxidation, rate of solution

ABSTRACT: The kinetics of hydrogen evolution and the kinetics of zirconium dissolution were examined in this investigation to determine the mechanism by which zirconium is dissolved in acid fluoride solutions. Data was obtained from solutions of $0.1N H_2SO_4 + xHF$ where x is the concentration varied from 10^{-3} to $1N$. Pyrex cells were used for $[HF] \leq 10^{-2}N$ and teflon or polyethylene cells for $[HF] \geq 10^{-2}N$; equivalence of results was claimed. The zirconium electrode preparation was described previously by the authors (DAN, 137, 642 (1961); DAN, 143, 640 (1962)). Solutions were nitrogen purged although air does not affect rate. The solution rate was determined by anode current and by colorimetry using xylenol orange

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1 32/55-46 EWT(e)/EWP(t)/ETI IJP(c) NW/JD/JQ/WB

ACC NR: AP6015293

(N)

SOURCE CODE: UR/0365/66/002/003/0360/0361

AUTHOR: Gil'man, V. A.; Kolotyркиn, Ya. M.

6⁰B

ORG: Physicochemical Scientific Research Institute im. L. Ya. Karpov (Nauchno-issledovatel'skiy fiziko-khimicheskiy institut)

TITLE: Pitting corrosion of zirconium in perchlorate solutions

SOURCE: Zashchita metallov, v. 2, no. 3, 1966, 360-361

TOPIC TAGS: corrosion, zirconium, perchlorate, chloride

ABSTRACT: A study of zirconium corrosion in 0.1 and 1.0 N NaClO₄ and HClO₄ and also 0.3 N LiClO₄ showed that under spontaneous dissolution and anodic polarization conditions, zirconium is in a passive state until a certain critical potential ϕ_{cr} is reached, at which extensive pitting begins to take place. In this respect, the anodic behavior of Zr in perchlorate solutions is similar to that in chloride solutions, except for the fact that in the latter the critical pitting potential is more positive by almost one whole volt. The value of ϕ_{cr} in perchlorate solutions is determined by the ClO₄⁻ concentration, increasing by 100 mV for a tenfold decrease of the perchlorate concentration, and, as in the case of chlorides, is independent of the solution pH or the anodic current density. Thus, halide ions are not the only ones to cause the pitting corrosion of zirconium; ClO₄⁻ ions also have this capacity (although not

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UDC: 620.193.01

Card 2/2 45

L 04777-67 EWT(m)/EWP(w)/EWP(t)/ETI/EWP(k) LJP(c) JD/WW/JG/WB

ACC NR: AP6025725 SOURCE CODE: UR/0365/66/002/004/0490/0492

AUTHOR: Gil'man, V. A.; Kolotyrkin, Ya. M.; Malkina, R. I. ⁵⁷₅₅

ORG: Scientific Research Physicochemical Institute im. L. Ya. Karpov ^B
(Nauchno-issledovatel'skiy fiziko-khimicheskiy institut)

TITLE: Solution of zirconium in concentrated hydrochloric acid ²⁷

SOURCE: Zashchita metallov, ²⁷v. 2, no. 4, 1966, 490-492

TOPIC TAGS: zirconium, corrosion, corrosion rate, electrochemistry, solution kinetics, chloride, induction melting, metal melting

ABSTRACT: Studies of the corrosion ⁴and electrochemical behavior of zirconium under anodic polarization conditions were continued using concentrated HCl, 11.5 N. In the passive region, at potentials more negative than +0.17 v, the rate of Zr solution to Zr^{+4} is independent of potential and amounts to $0.2-1 \cdot 10^{-4}$ amp/cm². The rate of solution of Zr pre-etched in HF corresponds to the stationary anodic current density at the given potential. In the case of Zr with atmospheric oxide films, the initial average rate of solution is an order higher than the anodic current through the system, but becomes somewhat lower and almost constant with time. The proposed mechanism for the solution of passive

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UDC: 620.193.41:669.296

L 04777-67

ACC NR: AP6025725

2

Zr comprises the electrochemical formation of an oxide on the metal surface with subsequent solution of the oxide. At potentials above 0.17 v the rate of solution and anodic current increase rapidly resulting in embrittlement and eventual disintegration of Zr electrodes produced by induction melting. Action on arc melted Zr containing 0.02% C is ten times slower. Tests under potentiostatic conditions were found to be more severe than the corrosion tests run at 100°C. The rate of solution of Zr in concentrated HCl is 2 orders higher than in dilute acid. Orig. art. has: 2 figures.

SUB CODE: 07, 13/ SUBM DATE: 03Apr66/ ORIG REF: 003/ OTH REF: 004

Card 2/2 *pls*

GIL'MAN, Ya.

Mechanization of cleaning and painting of vertical cylindrical tanks.
Stroitel' 2 no.4-5:33 ~~Ap-M~~ '56. (MIRA 10:1)
(Tanks) (Painting, Industrial)

GIL'MAN, Ya.

Apparatus for grinding chalk. Stroitel' no.6:11 Je '57. (MLRA 10:9)
(Chalk) (Crushing machinery)

GIL'MAN, Ya.
GIL'MAN, Ya., inzh.

Precast reinforced concrete grain dryers. Gor.1 sel.stroi.
no.8/9:33 Ag-S '57. (MIRA 10:12)
(Precast concrete construction) (Grain elevators)

CHEREPANTSEV, G., inzh.; GIL'MAN, Ya., inzh.

Demonstration building of a dormitory. Stroitel' no.4:3-4 Ap '58.
(MIRA 11:5)
(Rostov-on-Don--Student housing)

GEL'FREYKH, V., arkhitektor; KORABEL'NIKOV, A., arkhitektor; GOLUBOVSKIY,
L., arkhitektor; GIL'MAN, Ya., inzh.

Design of an apartment house with rolled reinforced concrete
components executed by the Institute for the Design and Planning
of Housing and Civil Construction in the City of Moscow. Zhil.
stroi. no.4/5:38-42 '58. (MIRA 12:6)

(Apartment houses)
(Architecture--Designs and plans)

18 826-11 1327 1121

26205
S/194/61/000/005/027/078
D201/D303

AUTHOR: Gilman, Yul

TITLE: Electric simulation of frames with offset joints taking into consideration the elastic fixing-in of struts

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1961, 34, abstract 5 B246 (Tr. 1-y mezhvuz. nauchno-tekhn. konferentsii po elektr. modelirovaniyu zadach stroit. mekhan., soprotivleniya materialov i teorii uprugosti, B.m. Novocherk. politekhn. in-t, 1960, 120-129)

TEXT: The possibility is considered of using the electric analogue ЭММС-1 (EMMS-1) for designing flat frames with offset joints and taking into consideration the effect of yielding of the base on the stresses resulting in the frame. It is emphasized that use of electric analogues reduces by many times the process of determining

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25205

S/194/61/000/005/027/078
D201/D303

Electric simulation...

stresses and obviates complicated calculations. When designing the analogue it is easy to take into consideration the effect of yielding of the base on bending moments within the frame. The discrepancies between the analytical and analogue results of calculations is about 5% which shows the accuracy and effectiveness of the method discussed. 10 figures. 8 references. [Abstracter's note: Complete translation]

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Card 2/2

GIL'MAN, Ya.D.

Preparing the foundation of a large-panel building on sagging soil. Osn., fund. i mekh. grun. 3 no.3:25-26 '61.

(MIRA 14:7)

(Soil stabilization) (Foundations)

LOMIZE, G.M., doktor tekhn.nauk, prof.; GIL'MAN, Ya.D., inzh.

Electric spark method of compacting soil. Gidr. stroi. 32
no.6:42 Je '62. (MIRA 15:6)
(Soil stabilization)

LOMIZE, G.M., prof., doktor tekhn. nauk; GIL'MAN, Ya.D., inzh.

Compacting soils by electric discharges. Trudy Giprevodkhoz
no.22:155-162 '63. (MIRA 17:8)

GIL'MAN, Ya.D.

Influence of electric discharges on sandy soils. Osn., fund.
1 mekh. grun. 5 no.5:8-10 '63. (MIRA 16:10)

BUENADZHI, V.A. (Rostov-na-Donu); AMOSYEV, V.V. (Rostov-na-Donu)
GILMAN, Ya.D. (Rostov-na-Donu)

"Manual for designing foundation beds and foundations of
buildings and structures on sagging soils," by A. A.
Grigorian. Osn., fund. i mekh.grun. 8 no.1138 '66.
(1976. 10:1)

YEGORSHIN, V.P., prof.; GIL'MAN, Ye.A., red.; VOZNESENSKIY, A.D., tekhn.red.

[Theoretical mechanics; test assignments 1-4 for correspondence students in Course 2 with engineering majors in agricultural colleges]
Teoreticheskaya mekhanika; kontrol'nye zadaniya 1-4 dlya studentov-zaochnikov II kursa inzhenernykh spetsial'nostei sel'skokhozyaystvennykh vuzov. [Version 7] Variant 7. Sostavil V.P.Yegorshin. Moskva, 1958. 9 p. (MIRA 12:3)

1. Vsesoyuznyy sel'skokhozyaystvennyy institut zaochnogo obrazovaniya. (Mechanics--Problems, exercises, etc.)

YEGORSHIN, V.P., prof.; GIL'MAN, Ye.A., red.; VOZNESENSKIY, A.D., tekhn.red.

[Theoretical mechanics; test assignments 1-4 for correspondence students in course 2 with engineering majors in agricultural colleges] Teoreticheskaya mekhanika; kontrol'nye zadaniya 1-4 dlya studentov-zaochnikov II kursa inzhenernykh spetsial'nostei sel'skokhozyaystvennykh vuzov. [Version 3.] Variant 3. Sostavil V.P.Egorshin. Moskva, 1958. 10 p. (MIRA 12:3)

1. Vsesoyuznyy sel'skokhozyaystvennyy institut zaochnogo obrazovaniya.
(Mechanics--Problems, exercises, etc.)

ANDRIANOV, V.N., prof.; DRUZHININA, N.A., assistant; MISHARINA, Ye.A.,
kand.tekhn.nauk; NIKONOV, L.V., dotsent; SHEPRINK, B.E., prof...
retsensent; GLEBOVICH, A.A., kand.tekhn.nauk; GIL'MAN, Ye.A.,
red.; VOZNESENSKIY, A.D., tekhn.red.

[Electric machines; instructions and assignments for students
specializing in the electrification of agriculture] Elektricheskie
mashiny; metodicheskie ukazaniia i kontrol'nye zadaniia dlia stu-
dentov spetsial'nosti "elektrifikatsiia sel'skokhoziastvennogo
proizvodstva." Pod red. V.N.Andrianova i A.A.Glebovicha. Moskva,
Mosk. in-t mekhanizatsii i elektrifikatsii sel'.khoz., 1958. 56 p.
(MIRA 12:2)

(Electric machinery)

ZHURAVEL', I.V., dotsent; FLAKSER, Ya.N., doktor tekhn.nauk, red.;
GIL'MAN, Ya.A., red.; VOZNESENSKIY, A.D., tekhn.red.

[Hydraulics; control lessons for correspondence students
in engineering faculties majoring in irrigation and drainage]
Gidravlika; kontrol'nye zaniatiia dlia studentov-zaochnikov
gidromeliorativnoi spetsial'nosti inzhenernogo fakul'teta.
Balashikha, 1959. 20 p. (MIRA 14:12)

1. Balashikha, Vsesoyuznyy sel'skokhozyaystvennyy institut
zaochnogo obrazovaniya.
(Hydraulics)

TOMILIN, A.G., prof.; GIL'MAN, Ye.A., red.

[System of the animal world (characteristics of basic groups)]
Sistema zhivotnogo mira (kharakteristika osnovnykh grupp); ucheb-
noe posobie dlia studentov zootekhnicheskogo i agronomicheskogo
fakul'tetov. Moskva, Vses.sel'khoz.in-t zaobnogo obrazovaniia,
1962. 34 p. (MIRA 16:2)
(Zoology)

GIL'MANOV, G.R

Qualified personnel for automatically controlled machinery. Prof.-
tekh. obr. 20 no.4:28-29 Ap '63. (MIRA 16:5)

1. Direktor uchebno-kurovogo kombinata neftepromyslovogo upravleniya
"Oktyabr'skneft'", Bashkirskaia ASSR.
(Petroleum workers--Education and training)

ANISIMOV, Nikolay Gerasimovich; GIL'MANOV, Gilemdar Rizvanovich;
STRATIYEV, Valentin Ivanovich; GUSTASHNEV, G.A., red.

[Frequency-type remote control system for oil fields]
Chastotnaia sistema telemekhanizatsii neftepromyslov.
Ufa, Bashkirkoe knizhnoe izd-vo, 1962. 83 p.
(MIRA 17:7)

GIL'MANOV, G.R.; YURCHENKO, V.I.; SANHIKOV, A.V.

Determining the pressure on the intake of an electric centrifugal
sinking pump by means of a frequency transducer. Nefteprom, delo
no.9:26-29 '65. (MIRA 18:10)

1. Nauchno-issledovatel'skaya laboratoriya po avtomatike i
telemekhanike neftepromyslovogo upravleniya "Oktyabr'skneft".

GIL'MANOV, G.R.

Means for reducing oil and gas losses in fields of the
Petroleum Production Administration of the Association of
the October Petroleum Industry. Nefteprom.delo no.10:
27-31 '65. (MIRA 19:1)

1. Neftepromyslovoye upravleniye "Okt'yabr'skneft'".

VALIULLIN, A.V.; ~~GIL'MANOV~~, I.G.; KHASANOV, Kh.Kh.; KOROL'CHUKA, V.M.,
red.; LODVIKOVA, A.S., red. izd-va; NABIULLINA, R.S., tekhn.
red.

[Fruit culture of the Tatar A.S.S.R.] Sadovodstvo Tatarskoi ASSSR.
Kazan', Tatarskoe knizhnoe izd-vo, 1960. 279 p. (MIRA 14:9)
(Tatar A.S.S.R.—Fruit culture)

YAKOVLEVA, V.I.; KRETOVICH, V.L.; GIL'MANOV, M.K.

Localization of glutamate dehydrogenase in corn roots. Biokhimiia
29 no.3:463-469 My-Je '64. (MIRA 18:4)

1. Institut biokhimii imeni Bakha AN SSSR, Moskva.

YAKOVLEVA, V.I.; KRETOVICH, V.L.; GIL'MANOV, M.K.

Glutamic dehydrogenase of corn roots. Biokhimiia 29 no.5:
896-904 J1-Ag '64. (MIRA 18:11)

1. Institut biokhimiia imeni Bakha AN SSSR, Moskva.

GIL'MANOVA, G.A.

Surplus callus formation following femoral fracture. Med.zhur. Uzb.
no.11:68-70 N '60. (MIRA 14:5)

1. Iz Uzbekskogo nauchno-issledovatel'skogo instituta travmatologii
i ortopedii (direktor - A.Sh.Shakirov).
(FEMUR--FRACTURE)

GIL'MANOVA, G. Kh., BOYKO, V.A., LAPSHINA, G. N.

"The importance of gamasidae in the maintenance of a focus of tickborne encephalitis." Page 67

Desyatoye soveshchaniye po parazitlogicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

GIL'MANGVA, G. KH., BOYKO, V. A., STEFANOV, K. D., LAPSHIN, G. N., GUBAIDULLI, YU. SH.

"The study of the natural foci of tickborne encephalitic in the TASSR".

Page 69

Desyatoye soveshchaniye po parazitobicheskim problemam i prirodnoochagovym
boleznyam. 22-29 Okiyabrya 1959 g. (Tenth Conference on Parasitological
Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-
Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences
USSR, No. 1 254pp.

GIL'FANOVA, G. Kh.; BOYKO, V.A.; LAPSHINA, G....

Participation of Gamasidae mites in the circulation of tick-borne encephalitis virus in the natural foci of the Tatar A.S.S.R. Med. parazit. i parazit. bol. 33 no.2:157-161 Apr-May '64 (RUS 18:1)

1. Kazanskiy nauchno-issledovatel'skiy institut epidemiologii, mikrobiologii i gigiyeny (direktor I. Ye. Alatyrtseva).

GUMEROVA, M.Kh.; ARISTOVA, T.V.; GIL'MANOVA, R.G.; L'VOV, P.V.; BUKCHANAYEVA,
M.S.; MUKHAMETSHINA, M.A.; GAYMULLINA, N.M.; KHRAMOVA, N.P.;
KOBRAKOVA, I.N., red.; LABUDIN, N.T., red.; IBROGIMOVA, Z.A.,
tekhn.red.

[Forty years of the Tatar A.S.S.R.; statistical collection]
Tatarskaya ASSR za 40 let; statisticheskii sbornik. Kazan',
Tatarskoe knizhnoe izd-vo, 1960. 171 p. (MIRA 14:3)

1. Tatar A.S.S.R. Statisticheskoye upravleniye. 2. Nachal'nik
Statisticheskogo upravleniya Tatarskoy ASSR (for Kobranova).
(Tatar A.S.S.R.--Statistics)

GIL'MANSHIN, G. G.

GIL'MANSHIN, G. G.

5(0)

NAME I BOOK NOTATION

807/2019

Book. Khimiko-tekhnologicheskii Institut imeni N.M. Kuvshina

Trudy, 79, 22, Khimicheskoye imeni (Transactions of the Chemical and Technological Institute imeni N.M. Kuvshina, 79, 22, Chemical Sciences) Leningrad, 1958.

175 p. Brevets only inserted, 300 copies printed.

Editorial Board: N.M. Kuvshin (Resp. Ed.) Professor, A.A. Trifunov, (Resp. Ed.) Professor, I. Ye. Maysak (Resp. Ed.) Professor, A.A. Trifunov, (Resp. Ed.) Professor, A. Ye. A. Maysak, Academician, Kh. M. Maysak, G. Ye. Vashurin, Professor, A.M. Kravtsov, Professor, N.A. Dolanov, Professor, Dr. A. Tikhonov (Resp. Secretary) Doctor; Ed.: Ye. Kuvshin, Tech. Ed.: I. M. Zupnik.

NOTE: This book is intended for industrial chemists, technologists, scientists, teachers, and research students in applied chemistry.

CONTENTS. The collection contains reports by faculty members of the sponsoring institute and also chemists who celebrate the 75th year of the birth and first anniversary of the death of Professor Alexander Khimicheskii Vasil'yev, Doctor of Chemical Sciences and Head of the Faculty. A review of Vasil'yev's scientific activities is given along with a chronological bibliography of his published works and that of members of the Institute under his leadership. The collection contains articles dealing with electro-chemistry and the analysis of electrochemical processes, chemical analysis, and investigations of the properties of polymers and physical-chemical phenomena in industrial processes, etc. The collection is illustrated with diagrams, showing the properties of building materials with additives, etc. References are given at the end of each article.

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10. Gil'manishin, G.G., and Ye. M. Kuvshin. The Influence of Oxygen on the Electrolytic Reduction of Lead in a Mercury-Drop Electrode (Preliminary report) 77

11. Lisitskiy, B.Y., and Students Z.G. Saitina and I.G. Pilyanova. The Possibility of Directly Determining Sodium in the Presence of Group I ions 86

12. Zupnik, A.Z., and K.M. Mochalov. The Conversion of Methane With Oxygen in an Electric Arc Discharge 91

13. Alakozhova, Ye. I. Analysis of Tanning Baths 102

14. Zupnik, A.Z., and B.Y. Kuvshin. Adsorption of Nitrogen Gases 106

15. Zupnik, A.Z., and B.Y. Kuvshin. Density and Viscosity of the System Nitrogen-Pentane 117

16. Zupnik, A.Z., and B.Y. Kuvshin. Physicochemical Properties of the System Nitrogen-Water 120

Card 4/6

13

80061

S/020/60/132/01/35/064
B011/B126

5.2400(A)

AUTHORS: Mochalov, K. N., Gil'manshin, G. G.

TITLE: The Polarographic Behavior of Sodium¹-, Potassium¹-, and Lithium¹ Boron Hydrides¹

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 1, pp. 134-137

TEXT: The views on the theme in the title are directly contradictory (Refs. 6,7) in the few (2) relevant works. In their experiments the authors used commercial (~80%) and purified (98%) boron hydrides. They used the micropolarograph of Heyrovský, model M-102 with a dropping mercury electrode. For NaBH₄ in NaOH they have found a single wave, namely that of the ion BH₄⁻. Its nature was determined by further experiments (Fig. 1, Table 1). The position and character of these waves remain practically unchanged through variations in the concentration of boron hydride and through changes in the composition of the background. This result disproves the data of R. L. Pecsok (Ref. 6). The authors studied the dependence of the height of the boron hydride wave on the concentration of BH₄⁻ ions. The dependence is linear between 10⁻³ and 10⁻¹ moles/l. The limiting current here is no complete diffusion current. The metallic boron hydrides

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The Polarographic Behavior of Sodium-, Potassium-,
and Lithium Boron Hydrides

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decompose relatively quickly in aqueous, especially in acid solutions, so that the polarographing is made very difficult. Therefore, the solutions used were prepared with the use of the relevant alkalis and alkaline borate buffer mixtures. From this it was established that, for the same concentration, the wave height is highly dependent on the pH in the solution. With a pH above 12.5 the boron hydrides are relatively stable, but the wave was practically missing altogether. Thus, it follows that in reality the wave does not belong to the BH_4^- ion, but to one of its hydrolysis products. These occur in several stages in one of which diborane is given off under certain conditions. However, diborane can react with alkalis and form the so-called hypoborates (see scheme). Gaseous diborane was passed through concentrated KOH-, NaOH-, and LiOH solutions when cooled. The resulting hypoborate solutions showed the same wave with $E_{1/2} = -0.6$ v. The dilution of these solutions led to a proportional decrease in wave height. When the solution is left standing, the height of the "hypoborate" wave, exactly as the "boron hydride" wave, decreases according to an equation of the first order (Ref. 8). When the solutions are boiled and strongly acidified, the wave disappears after the destruction of the hypoborates. Thus, the "boron hydride" wave is basically a "hypoborate" wave. It is difficult to say to which of the 3 hypoborates the wave belongs. However, it cannot belong to the $\text{BH}_3(\text{OH})^-$

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The Polarographic Behavior of Sodium-, Potassium-,
and Lithium Boron Hydrides

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B011/B126

ion. It is more likely that the $BH(OH)_3^-$ ion is responsible for the wave. The electrodic reaction which the said wave causes can obviously not (contrary to Pecsok) be brought about by oxidation of the BH_4^- ions, but must be due to the oxidation of the hypoborate ions (see scheme). Of the two schemes set out, the second is more likely. The following are mentioned: D. Il'kovič, A. F. Zhigach, V. I. Mikheyeva, V. Yu. Surs, Kh. V. Shifrin, A. A. Bogonostsev, O. I. Rusetskiy, and T. N. Dymova. There are 1 figure, 1 table, and 14 references, 4 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR
(Institute of General and Inorganic Chemistry of the Academy of
Sciences, USSR)

PRESENTED: December 26, 1959, by I. I. Chernyayev, Academician

SUBMITTED: December 15, 1959

Card 3/3

37638

S/076/62/C36/005/013/013
B101/3110

11.1240

AUTHORS: Mochalov, K. N., and Gil'manshin, G. G.

TITLE: Polarographic study of alkali-metal boron hydrides

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 5, 1962, 1089-1094

TEXT: With a view to elucidating the processes that occur in the hydrolysis of NaBH_4 , KBH_4 , LiBH_4 , and C_5BH_4 solutions of these boron hydrides were examined polarographically in aqueous solutions by using a recording polarograph (type 7-77-46, "orion", Hungary), a mercury dropping electrode, and a calomel reference electrode. The boron hydrides were prevented from decomposing by being dissolved respectively in 0.2 M NaOH, KOH, and LiOH. Investigation of the polarization within the range +0.2 to -2.0 v at room temperature showed that, unlike what had been found by R. L. Pecsok (see below), the three boron hydrides gave rise to the same wave, namely $E_{1/2} = -0.65$ v. Impurities (e.g., sodium alcoholates) did not affect $E_{1/2}$. As a result of hydrolysis of the boron hydride, the wave amplitude decreased with time. This process can be accelerated by

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B101/B110

Polarographic study of alkali- ...

acidification, heating, or catalysis. Different backgrounds did not affect the wave. The wave $E_{1/2} = +0.105 - 0.013$ pH found by Pecsok is attributed to the anodic dissolution of Hg in an alkaline medium. Results: (a) Change in pH and temperature ($15-35^{\circ}\text{C}$) do not affect the wave potential. The wave amplitude of NaBH_4 and KBH_4 in the range of $1 \cdot 10^{-3}$ to $1 \cdot 10^{-4}$ moles/l is a linear function of the concentration of boron hydride. (b) The wave amplitude decreases with increasing pH. At $\text{pH} > 12.5$ - i.e., if no hydrolysis takes place at all - no further waves will appear. Polarographic analysis of CaH_2 and B_2H_6 showed no wave with the first compound, but $E_{1/2} = -0.65$ v when B_2H_6 was bubbled through NaOH or KOH. From this it is concluded that the wave is due to the resulting hypoborates. Polarographic results obtained from stepwise hydrolyzed LiBH_4 and from $\text{NaBH}(\text{OCH}_3)_3$ indicate that the wave is not produced by the BH_4^- ion but by the $\text{BH}(\text{OH})_3^-$ ion. Analysis of the polarographic kinetic curves for NaBH_4 and KBH_4 confirmed that the hydrolysis of these compounds followed the theory of the kinetics of consecutive processes. There are

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Polarographic study of alkali- ...

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B101/B110

4 figures and 2 tables. The most important English-language reference is:
R. L. Fecsok, J. Amer. Chem. Soc., 75, 2862, 1953.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskii institut im. S. M.
Kirova (Kazan' Institute of Chemical Technology imeni S. M.
Kirov)

SUBMITTED: August 19, 1961

Card 3/3

X

L 59535-65 EWP(e)/ENT(m)/EFF(c)/ENP(i)/ENG(m)/ENP(j)/T/ENP(t)/ENP(h) PC-4/Pr-4
 JUP(c) JD/KK/RM

ACCESSION NR: AP5016815

UR/0195/65/006/003/0541/0544

542.938 : 541.44 : 546.27

AUTHOR: Mochalov, K. N.; Khain, V. S.; Gil'manshin, G. G.

TITLE: Kinetic investigation of the intermediate stages of BH_4^- -ion hydrolysis

SOURCE: Kinetika i kataliz, v. 6, no. 3, 1965, 541-544

TOPIC TAGS: hydrolysis, sodium borohydride, kinetics

ABSTRACT: Kinetics of the elementary steps of the consecutive reaction sequence of the hydrolysis of sodium borohydride was studied at pH of 9.52 to 13.38 and at 15°, 25°, and 35 ± 0.1°C. The ionic strength of the buffer solutions used was 0.4 at 25°C. The object of this work was to elucidate the mechanism of hydrolysis of borohydrides. Hydrolysis of the most stable intermediate ions [BH_3OH^- , $BH_2(OH)_2^-$, and $BH(OH)_3^-$] was studied separately using alkaline solutions of $NaBH_3OH$, $NaBH_2(OH)_2$, and $NaBH(OH)_3$. The pH was measured with an accuracy of 0.01 using a Danish made pH-meter (Radiometer 72 Emdrupvej, Copenhagen). In the consecutive reaction of hydrolysis of the BH_4^- -ion, the following step is rate limiting: $BH_4^- + BH_3OH^-$. This rate limiting step is made up of two elementary steps and it initiated according to:

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ACCESSION NR: AP5016615

$\text{BH}_4^- + \text{H}^+ \rightarrow [\text{H}^+\text{BH}_4^-]$. The intermediate ions, BH_3OH^- and $\text{BH}_2(\text{OH})_2^-$, are slightly less stable than the BH_4^- -ion. The least stable of the intermediate ions is $\text{BH}(\text{OH})_3^-$ which hydrolyses about 1000 times faster than BH_3OH^- and $\text{BH}_2(\text{OH})_2^-$. Hydrolysis of NaBH_4 , NaBH_3OH , $\text{NaBH}_2(\text{OH})_2$, and $\text{NaBH}(\text{OH})_3$ is a first order reaction. The values of the first order rate constants and the times for half-conversion at given pH and temperature deviated 5 to 7% from the respective average values for the series of experiments. At a given temperature the rate of hydrolysis is inversely proportional to pH. The first order rate constant for all elementary hydrolysis steps is proportional to the activity of the hydrogen ions a_{H^+} . The overall kinetic equation of NaBH_4 hydrolysis is:

$$-\frac{dC}{dt} = K_2 \cdot C \cdot a_{\text{H}^+}$$

where: C is concentration of NaBH_4 , at time t, a_{H^+} is activity of the hydrogen ions, and K_2 is the second order rate constant. K_2 is dependent only upon reaction temperature. The thermal coefficient of the rate constant in the 15° to 35°C range for NaBH_4 , NaBH_3OH , $\text{NaBH}_2(\text{OH})_2$ and $\text{NaBH}(\text{OH})_3$ is 2.02, 1.85, 1.83 and 1.83 respectively. The corresponding energies of activation are 12.8, 11.2, 11.0, and 11.0 kcal/mol. Dependence of the individual rates of hydrolysis K_T upon temperature (T)

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ACCESSION NR: AP5016815

and dependence of the respective half-conversion times ($\tau_{1/2}$) upon temperature (T) and pH are:

$$\begin{aligned} \text{NaBH}_4 \quad \ln K_T &= -\frac{6449}{T} + 40,20; \quad \lg \tau_{1/2} = \text{pH} - (0,034T - 1,92) \\ \text{NaBH}_4 \cdot \text{O} \quad \ln K_T &= -\frac{5637}{T} + 37,88; \quad \lg \tau_{1/2} = \text{pH} - (0,027T + 0,357) \\ \text{NaBH}_4(\text{OH})_2 \quad \ln K_T &= -\frac{5544}{T} + 37,63; \quad \lg \tau_{1/2} = \text{pH} - (0,027T + 0,384) \\ \text{NaBH}(\text{OH})_3 \quad \ln K_T &= -\frac{5444}{T} + 37,63; \quad \lg \tau_{1/2} = \text{pH} - (0,024T + 4,00). \end{aligned}$$

Replacement of sodium by Li, K, or Fe affects neither the overall rate nor the rates of the individual steps of hydrolysis of the respective hydrides and-hydroxyhydrides. Orig. art. has: 1 table, 2 figures, 11 formulas.

ASSOCIATION: Kazanskiy khimiko-tehnologicheskii institut im. S. M. Kirova (Kazan Chemical Technological Institute)

SUBMITTED: 18May64

ENCL: 00

SUB CODE: GC

NO REF SOV: 005

OTHER: 007

Card 3/3

L 57778-65 EFF(c)/EPR/EWA(h)/EWP(j)/EWT(m) Pc-4/Pr-4/Ps-4 RFL
 ACCESSION NR: AP5014855 EM/WW/JW UR/0020/65/162/003/0613/0616

AUTHOR: Mochalov, K.N.; Khain, V.S.; Gil'manshin, G.G.

TITLE: Generalized mechanism of hydrolysis of the borohydride ion and diborane

SOURCE: AN SSSR. Doklady, v. 162, no. 3, 1965, 613-616

TOPIC TAGS: diborane hydrolysis, borohydride hydrolysis, borohydride ion, hydrolysis kinetics

ABSTRACT: On the basis of tabulated data, the authors have formulated a single, general mechanism encompassing the hydrolysis of the borohydride ion and diborane in neutral, acid, and alkaline media. In order to determine the relative rates of the various successive reactions of this mechanism, a study was made of the kinetics of the conversions $BH_4^- \rightarrow BH_3OH^-$, $BH_3OH^- \rightarrow BH_2(OH)_2^-$, and $BH_2(OH)_2^- \rightarrow BH(OH)_3$. It was noted that the rate of reaction of potassium ferricyanide with a solution of borohydride is determined by the rate of hydrolysis of the latter, and that this rate coincides with the rate of conversion of BH_4^- to the BH_3OH^- ion. Hence, the conversion $BH_4^- \rightarrow BH_3OH^-$ (via the intermediate complex $H^+BH_4^-$) is the rate-determining step of the consecutive reaction of borohydride hydrolysis. The conversion $BH_2(OH)_2^- \rightarrow BH(OH)_3^-$ is the first step in the hydrolysis of $BH_2(OH)_2^-$ to the borate; the second stage of this process.

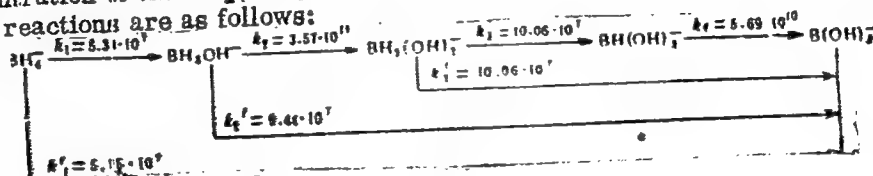
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ACCESSION NR: AP6014855

$\text{BH}(\text{OH})_3^- \rightarrow \text{B}(\text{OH})_4^-$, is approximately 500 times faster than the first. It is apparent that an aqueous solution of borohydride constitutes a complex system made up of many components. The concentrations of the latter were found, and the quantitative composition of the system was determined at various points in time; the concentrations of the BH_3OH^- and $\text{BH}(\text{OH})_3^-$ ions remain low (0.03-0.05 mole%) during the entire process, whereas the concentration of the $\text{BH}_2(\text{OH})_2^-$ ion attains 25.7 mole %. The rate constants of the consecutive reactions are as follows:

$$\begin{array}{c}
 k_1 = 3.3 \cdot 10^{-7} \\
 k_2 = 3.57 \cdot 10^{-11} \\
 k_3 = 10.05 \cdot 10^{-7} \\
 k_4 = 5.69 \cdot 10^{-10}
 \end{array}
 \text{BH}_3\text{OH}^- \xrightarrow{k_1} \text{BH}_2(\text{OH})_2^- \xrightarrow{k_2} \text{BH}(\text{OH})_3^- \xrightarrow{k_3} \text{B}(\text{OH})_4^-$$



Orig. art. has: 3 tables and 8 formulas.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiiy institut im. S. M. Kirova
(Kazan' Chemical Engineering Institute)

SUBMITTED: 06Nov64

ENCL: 00

SUB CODE: GC

~~NO REF SOV: 007~~

OTHER: 011

Card

2/2 bis

SATTAROV, M.M.; GIL'MANSHIN, I.G.

Selection of wells for the carrying out of water-exclusion operations. Izv. vys. ucheb. zav.; neft' i gaz 6 no.7:43-47 '63. (MIRA 17:8)

1. Ufimskiy neftyanoy institut i neftepromyslovoye upravleniye "Arlanneft'".

IMANAYEV, N.G.; GOMBINER, B.Ya.; KRAVCHENKO, I.I.; BLAZHENICH, V.A.;
MARKOV, V.F.; SATTAROV, M.M.; GIL'MANSHIN, I.G.; ASHIROV, K.B.;
BOBELYUK, V.F.; ROMANYUK, F.I.

Comments on the article by M.L. Surguchev "Exclusion of reservoir
waters". Neft.khoz., No.11, 1962. Neft.khoz. 41 no.8:38-57 Ag '63.

Present status of and prospects for the construction of steel
tanks in the U.S.S.R. Ibid.:58-62

1. Neftepromyslovoye upravleniye Tuymazaneft' (for Imamayev,
Gombiner). 2. Ufimskiy neftyanoy nauchno-issledovatel'skiy
institut (for Kravchenko, Blazhenich). 3. Neftepromyslovoye
upravleniye Chernomorneft' (for Markov). 4. Neftepromyslovoye
upravleniye Arlanneft' (for Sattarov, Gil'manshin). 5. Gosudar-
stvennyy institut po proyektirovaniyu i issledovatel'skim
rabotam neftedobyvayushchey promyshlennosti vostochnykh rayonov
strany (for Ashirov). 6. Vsesoyuznyy neftegazovyy nauchno-
issledovatel'skiy institut (for Bobelyuk, Romanyuk).

(MIRA 17:10)

GILMEANU, Ion

After fourteen days the sections are reporting. Const Buc
16 no.732:2 18 Ja'64.

TROYANKIN, Yu.V., kand. tekhn. nauk; GIMMEL'FARB, M.L., dots., red.

[Methods for the design of a copper-melting reverberatory
furnace] Metodika rascheta medeplavil'noi otrazhatel'noi pechi.
Pod red. M.L.Gimmel'farba. Moskva, Mosk. energ. in-t, 1963.
30 p. (MIRA 17:4)

GORDON, M.K.; GIL'MOVSKAYA, M.I.

Clinical aspects of an atypical course in Addison-Biermer disease.
Zdrav. Bel. 7 no. 4:43-45 Ap '61. (MIRA 14:4)

1. Iz terapevticheskogo otdeleniya (M.K. Gordon) oblbol'nitsy
v g. Vileyka (glavnyy vrach A.S. Romashko). Nauchnyy
rukovoditel' raboty - professor G.Kh. Davgyallo.
(ANEMIA)

GIL'O. Georgiy Genrikhovich; MIL'CHIN, A.E., redaktor; VOLYNTSEVA,
V.A., tekhnicheskiy redaktor.

[Laboratory work in the technology of typesetting by hand and
machine] Laboratornye raboty po tekhnologii ruchnogo i mashin-
nogo nabora. Moskva, Gos. izd-vo "Iskusstvo," 1954. 110 p.
(Typesetting) (MLRA 7:12)

~~G. I. Gerasimov~~ Gerasimovich; GULYA-YANOVSKIY, Vasil'y Vasil'yevich;
TEMKIN, Grigori'y Yakovlevich; MILANONOVA, Ye.V., redaktor;
CHICHERIN, A.N., tekhnicheskiy redaktor

[Continuity of production in the Avg.Sokolova typesetting plant]
Potokhnost' proizvodstva v nabornom tsekhe tipografii imeni Avg.
Sokolovei. Moskva, Gos.izd-vo "Iskusstvo," 1957. 92 p.
(Typesetting) (REL: 10:10)

ACC NR: AT7000188

SOURCE CODE: UR/0000/64/000/000/0162/0170

AUTHOR: Volodarskiy, R. F.; Gilod, D. A.; Demidova, M. A.

ORG: none

TITLE: Sketch map of the present-day surface of the folded basement of the Ciscaucasus from geophysical data

SOURCE: Moscow. Universitet. Kafedra geofizicheskikh metodov issledovaniya zemnoy kory. Geofizicheskiye issledovaniya (Geophysical research), no. 1. Moscow, Izd-vo Mosk. univ., 1964, 162-170

TOPIC TAGS: ^{geologic survey, techniques} earth crust, gravity survey, magnetic survey/Russian platform, Ciscaucasus

ABSTRACT: Comprehensive analysis of geologic, geophysical, and borehole materials, as well as analysis of gravity and magnetic maps recomputed for different levels of the upper half space, have resulted in a tectonic regionalization of the Ciscaucasus and the solution of problems dealing with the geologic structure of the area. The article contains maps of the tectonic zoning of the folded basement of the Ciscaucasus and the southern regions of the Russian platform and surface of the Paleozoic basement of the Ciscaucasus are given. Orig. art. has: 2 figures.

SUB CODE: 08/ SUBM DATE: 05Nov64/ ORIG REF: 013/

Card 1/1

KARAPETOV, K.A.; GILOVYAN, V.A.

Investigation of a reduction in well-bottom permeability based on the pressure buildup curves. Neftprom. delo no.12:3-8 '63.

(MIRA 17:4)

1. TSekh nauchno-issledovatel'skikh i proizvodstvennykh rabot neftepromyslovogo upravleniya "Ordzhonikidzeneft".

MAMEDOV, A.M.; BYCHKOVA, T.V.; GILOVYAN, V.A.

Determining the optimal disbursement of a demulsifier from the
data of an investigation of compressor wells. Nefteprom. delo
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1. Neftepromyslovoye upravleniye "Ordzhonikidzeneft".

GILOVYAN, V.A.; SHALABANOV, A.S.

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N '55. (Plows) (MIRA 9:1)

GIL'SHTEYN, P.M., inzhener.; STARODINSKIY, D.Z., inzhener.

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GIL'SHTEYN, P.M., inzh.; STARODINSKIY, D.Z., inzh.

Automatic equipment for mounting machines on tractors. Trakt. i
sel'khoz mash. no. 11:13-16 ■ '58. (MIRA 11:11)
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GIL'SHTEYN, P.M., inzh.; STARODINSKIY, D.Z., inzh.

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1. Spetsial'noye konstruktorskoye byuro zavoda imeni Oktjabr'skoy
revolyutsii. (MIRA 12:11)

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Mounted scarifier for cultivating soil before deep plowing. Trakt.i sel'khoz mash. no.10:30 0 '59.

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1. Spetsial'noye konstruktorskoye byuro zavoda im. Oktyabr'skoy revolyutsii.

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GIL'SHTEYN, P.M., [Hil'shtein, P.M.]; STARODINSKIY, D.A. [Starodyns'kyi,
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revolyutsii.

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[Tillage machines for special purposes; their design and
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Avt. transp. 38 no. 5:13-14 My '60. (MIRA 14:2)
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COMMON ELEMENTS										COMMON VARIABLE INDEX									
111 AND 112 DEPT										113 AND 114 (PUBS)									
<p>57644 10</p> <p>8c</p>										<p>PROCESSES AND PROPERTIES INDEX</p>									
<p>Capacity for work in analysis. I. O. Glahn (Trans. Conf. Society, 1958, 100-107). Capacity for work was not distributed in increments of different productions, aged over 65.</p> <p>M. K.</p>																			
<p>ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION</p>										<p>20241 804199</p>									
<p>102000 01</p>										<p>102000 012 014 016</p>									
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The action of vapors from the production and treatment of osocerite upon the nervous system. I. O. Gilula, *Gigiena i Sanit.* 13, No. 11, 31(1948).—In the majority of cases disturbances of the vegetative nervous system take place, with pos. eye-heart reflex, respiratory arrhythmia; frequent cases of blood pressure disturbance (high, low, asymmetric) occur. The effects are traced to the action of hydrocarbons, both acute and chronic cases being observed. G. M. Kozlovskii

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1. Kafedra nervnykh bolezney Kiyevskogo meditsinskogo stomatologicheskogo instituta.
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GILULA, I.O., professor (Kiyev)

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